

Notes from the 04/11/06 MI BPM Upgrade Meeting  
Stephen Wolbers  
These notes can be found in Beams docDB #1526.

Agenda as announced:

Project Announcements

Beam Instrumentation Workshop May 1-4

Main Injector Status - Dave C.

Hardware status:

Transition Board: delivery, checkout and testing.

Transition Board controller status

Timing Board

Cables, crates, backplanes, Optilogic, other.

Software status:

Front-end software

Online software

Installation and Commissioning

Validation

AOB

0. Project Announcements

- Bob Webber is working on the documentation of the measurements of the cables in the tunnel.

- The Beams Instrumentation Workshop is scheduled for May 1-4 at Fermilab. There are three papers being written about the MI BPM upgrade. A first draft of the "general" paper should be circulated next week for people's comments and additions.

1. MI Status - Dave Capista

- Dave showed some updates on the MI8 and MI work. Some of the work in MI8 is behind (collimators, MWPC) but that should not affect the overall schedule. The quads are going in, a couple have vacuum problems but those are being addressed.

- Overall the schedule has the Booster and MI startup on May 24. So we should be planning to have everything ready by that date to take advantage of every opportunity to install and commission.

2. Hardware status:

Transition Board: bids, filters, delivery, checkout and testing.

Transition Board I/O status

Timing Board

Cables, crates, backplanes, Optilogic, other.

- Manfred gave a long discussion of the transition module. He and Andrea received the boards on Thursday April 6. On visual inspection with the eye the boards looked good. The filters were soldered onto the boards. Then the firmware was loaded.

- Tests with 53MHz and 2.5MHz input showed problems. They were tracked down to a couple of different things. Part of it was due to some confusion about which capacitors/jumpers were to be installed. This is solvable with clearer instructions and understanding. The other looks to be problems with the components on the back of the board. Closer inspection under a microscope show problems with the way that the components were installed. This needs to be discussed with the company. In addition, a capacitor near the diplexer was not soldered on one leg. And one inductor had a bad value (a component problem, not an assembly problem).

- More testing will be made with the boards. Manfred and Bob Forster and others will be talking and discussing all of this with the vendor before deciding whether to go with the full order (after corrections are made to the process) or whether we go one more cycle with a small number of boards.

- Stefano reported on the transition board controller card. The schematic is complete. The layout is in progress. Parts have been ordered and many have arrived. Coding work on the firmware has begun. The work is on schedule.

Bob Forster's report on hardware acquisition:

#### Transition Module Assembly

- PO#568055 Total=\$17,042.52 bid to Lace Technologies.
- Qty=72, Assembly includes Front Panel fabrication.
- Unit price \$201.23 plus 3 extra Front Panels.
- Expected Delivery :
  - o First Two – Picked up & Received Thursday April 6 with sample Front Panels.

Testing progresses by Manfred♣ & Andrea with help from CSS' Rick Mahlum.

Initial Results - The smoke hidden inside the chips didn't get out.♣

- o Remainder - (delivery tbd by tests of 1st 2)
- Should each module get a property number?
- Who is responsible for Long Term Support of these modules?

#### System Cables

- PO#566784 Total=\$34,413.40 Sole-Sourced to Casco.
- Expected Delivery : <complete>.
- Testing is in Progress by CSS' Tom Boes.

Slight SNAFU – we had to purchase connectors and build cables for the Enviroflex cables with Harting connectors to connect to in order to test them.

- A few failures from the first batch still to be returned along with whatever second batch failures are found.
- Casco still has one Fermilab crimp tool.

#### Analog VME Chassis J3 Backplanes

- PO#568474 Total=\$5,830 Sole-Sourced to Hybricon.
- Unit price: \$530 (Qty=11 \* \$530 = \$5,830)
- Expected Ship Date: Weds 19-Apr-06 (by phone)
- Expected Delivery : Tues 25-Apr-06 (Extrapolation)

#### Digital VME Chassis

- PO#566244 Total=\$67,292 bid to DAWN.
- Unit price: \$4,205.75 (Qty=16 \* \$4,205.75 = \$67,292)
- Expected Delivery : <complete>.
- DAWN UDP firmware works w/o Optilogic Hardware. Requires a firmware upgrade to all crates.

#### Air Dam Modules

- PO#568441 Total=\$5,148 Sole-Sourced to Elma.
- Unit price: \$17.16 (Qty=300 \* \$17.16 = \$5,148)
- Expected Delivery: 14-Apr-06 (from PO)

#### 4. Software status:

Front-end software  
Online software

- Hundreds of devices were defined for all the houses in preparation for installation and commissioning. Will need I43 and I44 changes for all of these as well.

- Need to do some work for the crate monitoring.

#### 5. Validation

- Rob showed some analysis of the BPM wire scan data. His slides can be found in beams-doc-2234. He has data for 257 BPM's (more than were actually installed). His analysis is being used to characterize the response, to look at and measure BPM to BPM differences, and to see what if any universal translation from raw measurements to

position measurements can be made.

- Rob will update his analysis next week and some decisions could be made then about how much accuracy is required, especially as one gets well beyond the center of the BPM aperture.

6. AOB